

Amendments to the Claims:

Please cancel claims 28, 40, and 57; and amend claims 1, 3, 9, 11, 18, 23-26, 29, 31, 39, 41, 48, and 56.

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A removable expansion module for a portable host, referred to as the first-level module, for engagement with a portable host when inserted into an opening in the host, the first-level module comprising:

an expansion module frame and a PCB;

a host-interconnect for coupling with the host when the first-level module is inserted in the opening in the host;

an I/O interconnect for coupling with an external I/O device;

I/O adapter circuitry for the I/O device;

~~a slot for a removable memory~~ a second-level interconnect for coupling with a second-level expansion module; and

~~removable memory~~ second-level adapter circuitry coupled to the second-level interconnect; for the removable memory;

wherein the first-level module has an opening sized and positioned to allow insertion of the second-level expansion module into the opening so as to engage the second-level interconnect while the first-level module is engaged with the portable host, and to allow withdrawal of the second-level expansion module from the opening so as to disengage from the second-level interconnect while the first-level module is engaged with the portable host.

2. (Original) The module of claim 1, wherein the module is a CompactFlash module.

3. (Currently amended) The module of claim 1, ~~wherein~~ wherein:
the second-level expansion module is a removable memory;
the second-level interconnect ~~removable memory slot~~ is compatible with a MultiMediaModule, and the removable memory MultiMediaModule; and

the second-level adapter circuitry is MultiMediaModule adapter circuitry.

4. (Original) The module of claim 1, wherein the I/O adapter circuitry is a serial I/O adapter and the I/O-interconnect includes a cable having a standard serial connector.

5. (Original) The module of claim 1, wherein the I/O adapter circuitry is a local area network adapter and the I/O-interconnect includes a cable having a standard local area network connector.

6. (Original) The module of claim 1, wherein the I/O adapter circuitry is a parallel adapter and the I/O-interconnect includes a cable having a standard parallel connector.

7. (Original) The module of claim 1, wherein the I/O-interconnect is a Honda-style 15-pin connector integral to the module.

8. (Currently amended) The module of ~~claim 1~~ claim 1, wherein the module is designed to abut and fasten with at least part of the I/O device such that the I/O-interconnect for coupling with the I/O device is cableless.

9. (Currently amended) ~~A removable expansion module for a portable host, the module comprising~~ The module of claim 1, wherein:

circuitry on the PCB includes decoder and reconstruction circuitry for digitally encoded media, the decoder and reconstruction circuitry having analog electronics for providing a first low-level analog signal output; and

~~a slot for the second-level expansion module is~~ a removable memory holding at least one digitally encoded instance of at least one media ~~type; type.~~

~~removable memory adapter circuitry for interfacing with the removable memory;~~
and

~~the analog electronics for providing a media output.~~

10. (Original) The module of claim 9, wherein the module is a CompactFlash module.

11. (Original) The module of claim 9, ~~wherein~~ wherein:

the second-level expansion module is a removable memory;
the second-level interconnect ~~removable memory slot~~ is compatible with a
~~MultiMediaModule, and the removable memory~~ MultiMediaModule; and
the second-level adapter circuitry includes is MultiMediaModule adapter
circuitry.

12. (Original) The module of claim 9, wherein the digitally encoded media is encoded in accordance with the MP3 standard.

13. (Original) The module of claim 9, wherein the digitally encoded media is encoded in accordance with the Microsoft Digital Audio standard.

14. (Original) The module of claim 9, wherein the playback of the digitally encoded media is initiated automatically upon insertion of the removable memory.

15. (Original) The module of claim 9, wherein the module further includes:
a radio-frequency receiver providing a second low-level analog signal output;
a low-level selector coupled to the first and second low-level analog signal
outputs and providing an input to the analog electronics; and
antenna coupling electronics associated with the media output for use with a
headset designed to function as an antenna for the radio-frequency receiver.

16. (Original) The module of claim 9, wherein the module further includes a
local area network adapter.

17. (Original) The module of claim 16, wherein the local area network adapter is
an Ethernet adapter.

18. (Currently amended) A method of digitally encoded media playback, the
method comprising:

providing a PDA having a display, input devices, and a first slot including an
associated first-level expansion interface;

providing an expansion module for the ~~PDA~~ PDA, the expansion module having
playback circuitry for the digitally encoded media;

inserting the expansion module into the first slot and operatively coupling the expansion module to the first-level expansion interface in the PDA;

providing a second slot in the expansion module for receiving a removable ~~memory~~ memory, the second slot including an associated second-level expansion interface;

providing the removable memory;

inserting the removable memory into the second slot and operatively coupling the removable memory to the second-level expansion interface;

providing I/O coupling from the PDA to an external system;

transferring the digitally encoded media from the external system to the PDA;

transferring the digitally encoded media from the PDA to the expansion module through the first-level expansion interface;

storing the digitally encoded media from the expansion module to the removable memory;

after storing, later reading the digitally encoded media from the removable memory through the second-level expansion interface, decoding the digitally encoded media, and producing a reconstructed media;

coupling the reconstructed media to a media output of the expansion module, and

providing application software for the PDA to provide user interface functions using the display and input devices of the PDA for controlling the storing and playback of the digitally encoded media.

19. (Original) The method of claim 18, wherein the I/O coupling includes a local area network connection and the external system includes an Internet web-site.

20. (Original) The method of claim 18, wherein the digitally encoded media is encoded in accordance with the MP3 standard.

21. (Original) The method of claim 18, wherein the digitally encoded media is encoded in accordance with the Microsoft Digital Audio standard.

22. (Original) The method of claim 18, wherein the playback of the digitally encoded media is initiated automatically upon insertion of the removable memory.

23. (Currently amended) ~~A removable expansion module for a portable host, the module comprising~~ The module of claim 1, wherein:

~~an expansion module frame and PCB~~

the I/O adapter circuitry includes serial I/O circuitry;

the I/O interconnect includes a serial I/O interconnect compatible with the serial I/O of a digital telephone;

~~a slot for~~ the second-level expansion module is a removable memory holding data including address book records;

~~the serial I/O interconnect providing~~ provides communication between the telephone and the module of the data associated with the removable memory; and

the second-level adapter circuitry includes removable memory adapter circuitry for interfacing with the removable memory.

24. (Currently amended) ~~A removable expansion module for a portable host, the module comprising~~ The module of claim 1, wherein:

~~an expansion module frame and PCB;~~

the I/O adapter circuitry includes serial I/O circuitry;

the I/O interconnect includes a serial I/O interconnect compatible with the serial I/O of a digital telephone;

~~a slot for~~ the second-level expansion module is a removable memory for holding data including digitally encoded telephone communications;

~~the serial I/O interconnect providing~~ provides communication between the telephone and the module of the data associated with the removable memory; and

the second-level adapter circuitry includes removable memory adapter circuitry for interfacing with the removable memory.

25. (Currently amended) ~~A removable expansion module for a portable host, the module comprising~~ The module of claim 1, wherein:

~~an expansion module frame and PCB, the module having~~ the I/O adapter circuitry includes serial I/O circuitry;

the I/O interconnect includes a serial I/O interconnect compatible with the serial I/O of a digital telephone;

~~a slot for~~ the second-level expansion module is a removable memory holding data including address book records and digitally encoded telephone communications;

the serial I/O interconnect ~~providing~~ provides communication between the telephone and the module of the data associated with the removable memory; and

the second-level adapter circuitry includes removable memory adapter circuitry for interfacing with the removable memory.

26. (Currently amended) ~~A removable expansion module for a portable host, the module comprising~~ The module of claim 1, wherein:

an expansion module frame and PCB;

the I/O adapter circuitry includes serial I/O circuitry;

the I/O interconnect includes a serial I/O interconnect compatible with the serial I/O of a GPS receiver;

~~a slot for~~ the second-level expansion module is a removable memory holding data including map information;

the serial I/O interconnect ~~providing~~ provides communication between the GPS receiver and the module of the data associated with the removable memory; and

the second-level adapter circuitry includes removable memory adapter circuitry for interfacing with the removable memory.

27. (Original) The module of claim 26 wherein the map information includes information about city streets.

28. (Canceled).

29. (Currently amended) The module of ~~claim 28~~ claim 1, further including application-specific circuitry, and wherein the ~~removable memory~~ second-level module is a private removable memory for the application-specific circuitry, the management of the removable memory being an ancillary function to the primary function of the specific application.

30. (Currently amended) The module of claim 29, wherein the I/O adapter circuitry is coupled to the application-specific circuitry and is not coupled to the PDA.

31. (Currently amended) A method of customizing a PDA for an application-specific function, the method comprising:

providing a PDA having a display, input devices, and a first slot including an associated first-level expansion interface;

providing an expansion module for the ~~PDA~~ PDA, the expansion module having application-specific circuitry;

inserting the expansion module into the first slot and operatively coupling the expansion module to the first-level expansion interface in the PDA;

providing a second slot in the expansion module for receiving a removable memory;

providing removable memory adapter circuitry within the expansion module for the removable ~~memory~~ memory, the second slot including an associated removable-memory interface;

providing the removable memory to the expansion module, reading and writing the removable memory by the removable memory adapter circuitry in accordance with the application-specific function; and

providing application software for the PDA to provide user interface functions using the display and input devices of the PDA for controlling the application-specific function.

32. (Original) The method of claim 31, further including:

providing an I/O adapter within the module;

providing I/O coupling from the I/O adapter to an external system; and

transferring data between the external system and the I/O adapter.

33. (Original) The method of claim 32, further including transferring the data between the I/O adapter and the PDA.

34. (Original) The method of claim 32, wherein:

the I/O adapter is a network adapter

the I/O coupling includes a network connection; and
the external system includes a web-site.

35. (Original) The method of claim 33, wherein at least one of the PDA and the module have at least a first and a second power mode and a message received over the network by the module selectively results in a transition from the first power mode to the second power mode.

36. (Original) The method of claim 32, wherein:
the I/O adapter is a communications receiver;
the I/O coupling includes a communications link; and
the external system includes a communications transmitter.

37. (Original) The method of claim 35, wherein at least one of the PDA and the module have at least a first and a second power mode and a message received over the communications link by the module selectively results in a transition from the first power mode to the second power mode.

38. (Original) The method of claim 32, wherein at least part of the external system is abutted and fastened to the expansion module such that the I/O coupling is cableless.

39. (Currently amended) A slot assembly for a removable expansion ~~memory~~ module, the slot assembly defining an opening, referred to as the slot, sized to accommodate an inserted device, the slot assembly comprising:

a PCB;
an I/O connector mounted on the PCB providing a first partial bottom of the slot;
a guide/connector assembly mounted on ~~PCB~~ the PCB, the guide/connector assembly having connector fingers and fingers disposed to make electrical contact with the inserted device, the guide/connector assembly also providing a second partial bottom of the slot, rear sides of the slot, and a slot back stop;
an upper outside frame of the expansion module frame providing front sides of the slot; and
the lid of the expansion module providing the top of the slot.

40. (Canceled).

41. (Currently amended) A first-level removable expansion module for a portable host, comprising:

- [[a)] an expansion module frame and PCB;
- [[b)] a host-interface for coupling with the host;
- [[c)] a first-level I/O interface for coupling with a first external I/O device;
- [[d)] first-level I/O adapter circuitry for the first external I/O device;
- [[e)] a slot for a second-level removable expansion module; and

[[f)] second-level expansion adapter circuitry for the second-level removable expansion module, the second-level expansion adapter circuitry including circuitry for coupling with at least a first type of second-level removable expansion module, the first type of second-level removable expansion module including a second-level I/O interface for coupling with a second external I/O device, and second-level I/O adapter circuitry for the second external I/O device.

42. (Original) The first-level removable expansion module of claim 41, wherein the first external I/O device is a mobile phone.

43. (Original) The first-level removable expansion module of claim 41, wherein the second-level I/O adapter circuitry includes first wireless network interface circuitry, the second-level I/O interface includes a wireless transducer, the second external I/O device includes second wireless network interface circuitry, and the coupling to the second external I/O device is wireless.

44. (Original) The first-level removable expansion module of claim 43, wherein the first wireless network interface circuitry is RF wireless network interface circuitry and the wireless transducer includes an antenna.

45. (Original) The first-level removable expansion module of claim 44, wherein the RF wireless network interface circuitry is compatible with the Bluetooth wireless network standard.

46. (Original) The first-level removable expansion module of claim 41, wherein the first external I/O device is a mobile phone, the second-level I/O adapter circuitry includes first RF network interface circuitry, the second external I/O device includes second RF network interface circuitry, and the coupling to the second external I/O device is RF.

47. (Original) The first-level removable expansion module of claim 46, wherein the portable host, the first-level removable expansion module, and the second-level removable expansion module are configured to provide a network gateway between a first network accessed via the mobile phone and a second network accessed via the first RF network interface circuitry.

48. (Currently amended) A method of providing a gateway between a first and second network, comprising:

[[a]] providing a portable host having a first-level slot;

[[b]] coupling a first-level removable expansion module with the portable host via the first-level slot, the first-level removable expansion module having first-level I/O adapter circuitry and a second-level slot for a second-level removable expansion module;

[[c]] coupling the first-level removable expansion module to the first network via the first-level I/O adapter circuitry;

[[d]] coupling a second-level removable expansion module with the first-level removable expansion module via the second-level slot, the second-level removable expansion module having second-level I/O adapter circuitry;

[[e]] coupling the second-level removable expansion module to the second network via the second-level I/O adapter circuitry; and

[[f]] transferring information between the first and second networks via at least the first-level and second-level removable expansion modules.

49. (Original) The method of claim 48, wherein the coupling to the first network is via a mobile phone.

50. (Original) The method of claim 48, wherein the first network is the Internet.

51. (Original) The method of claim 48, wherein the second network is a local area network.

52. (Original) The method of claim 51, wherein the local area network is an RF based network.

53. (Original) The method of claim 52, wherein the RF based network is compatible with the Bluetooth RF network standard.

54. (Original) The method of claim 48, wherein the first network is the Internet and the second network is a local area network.

55. (Original) The method of claim 54, wherein the coupling to the Internet is via mobile phone and the local area network is compatible with the Bluetooth RF network standard.

56. (Currently amended) A slot assembly for a removable expansion memory, the slot assembly comprising:

an expansion module kit, the kit ~~including a PCB~~; including:

a PCB,

an I/O connector mounted on one end of the PCB,

a lower outside frame, and

an upper outside frame, the upper outside frame having an opening on the I/O connector side of the kit to both conform to the I/O connector and permit and laterally guide the insertion of the expansion memory above the I/O connector; and

a plurality of contact fingers mechanically and electrically coupled to the PCB.

57. (Canceled)

58. (Original) A first-level removable expansion module for insertion into a portable host, comprising:

an expansion module frame;

a printed circuit board including circuitry;

contact fingers coupled to the circuitry of the printed circuit board;

an expansion module lid having a recessed area of size and shape for receiving the second-level removable expansion module stacked flat and partially counter-sunk within the

recess and coupling the contacts of the second-level removable expansion module to the contact fingers; and

wherein the second-level removable expansion module is retained within the cavity and electrical coupling is maintained with the contact fingers by the proximate contact of the second-level removable expansion module with the portable host when the mated combination of the first-level and second-level removable expansion modules is inserted into the portable host.

59. (Original) A method of performing data transfers in a portable computing system, the method comprising:

providing a portable computing host having a first slot including an associated first-level expansion interface;

inserting a first-level expansion module into the first slot and operatively coupling the first-level expansion module to the first-level expansion interface, the first-level expansion module having a first-level I/O interface and a second slot including an associated second-level expansion interface;

coupling a first external I/O device to the first-level I/O interface;

inserting a second-level expansion module into the second slot and operatively coupling the second-level expansion module to the second-level expansion interface;

performing first data transfers over the first-level expansion interface, the first data transfers being between the portable computing host and the first-level expansion module;

performing second data transfers over the first-level I/O interface and between the first-level expansion module and the first external I/O device; and

performing third data transfers over the second-level expansion interface, the third data transfers being between the first-level expansion module and the second-level expansion module.

60. (Original) The method of claim 59, wherein the second-level expansion module includes a second-level I/O interface, the method further comprising:

coupling a second external I/O device to the second-level I/O interface;

performing fourth data transfer over the second-level I/O interface and between the second-level expansion module and the second external I/O device.

61. (Original) The method of claim 59, wherein the first external I/O device is a mobile phone and the second-level expansion module includes expansion memory, the method further comprising:

- coupling the system to the Internet via the mobile phone;
- downloading data from the Internet to the expansion memory of the second-level expansion module.

62. (Original) The method of claim 60, wherein the first external I/O device is a mobile phone, the second-level I/O interface includes a first RF network interface, the second external I/O device includes a second RF network interface, and the fourth data transfer is implemented using an RF network protocol, the method further comprising:

- coupling the mobile phone to the Internet; and
- coupling the second external I/O device to the Internet via said second, third, and fourth transfers.